

Backache — Its Nature, Incidence and Cost

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In 1974 in California, 72,645 patients were admitted to hospital for backache. In 50 percent of these patients there was a diagnosis compatible with discogenic disease. Surgical treatment was done in 27 percent of the patients admitted to hospital. Total figures were determined for hospital costs and the costs of physician-related services. Costs for surgical treatment exceeded medical costs. Extrapolated to a national scale, it appears that the national cost for patients in hospital because of backache in 1974 was \$1.38 billion. This does not include outpatient care expense or loss of income.

THE CALIFORNIA HEALTH DATA CORPORATION was founded in 1965 to act as an independent, regional health data organization. Its 1975 publication "Length of Stay in California Hospitals: 1974"¹ is a compilation of statistics derived from analysis of the discharge records of more than one million patients from 214 California hospitals. (This data base was a third of the total in California in 1974. The California experience is approximately 10 percent of the national experience.) These data include length of stay by diagnosis and length of stay by procedure (operation).

Nature and Incidence

In all, 13 diagnostic descriptors were selected (see Table 1). These should cover almost all conditions identified broadly as backache. Table 2 shows these procedural descriptors that identify operations. Both Table 1 and Table 2 include a column to indicate the total number of patients

in each category, the average days' stay under these categories and a product of the number of patients multiplied by the average days' stay, in order to compute the total hospital/patient/bed/day figure for each diagnostic and procedural descriptor.

By subtracting the number of surgical (procedure) patients from the grand total (all descriptors) we identify those treated nonsurgically. This is important in computing costs, since both the hospital and physician charges are less for medically treated backache (Table 3).

From these tables, it can be seen that 45 percent of these patients discharged from hospital are identified as having discogenic disease (refer to Table 1 and note items 1 and 8). If incidence numbers for items 7 and 10 (radicular syndrome of lower extremities; sciatic neuritis) are added, the percentage of probable intervertebral disc disease becomes 50 percent. Fractures accounted for only 8.2 percent of the total.

In slightly greater than 27 percent of the patient total, surgical procedures were carried out.

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BACKACHE

However, this group of patients used greater than 46 percent of the total hospital/patient/days.

Cost

Daily hospital charges are dependent upon total services provided. (Total services include but are not limited to the following items: drugs, both orally and parenterally given; radiological services; pathology and laboratory services; special care units; physical therapy; dressings; special trays for catheterization and the like, and special equipment, for example, air mattress or traction equipment.) This bears a direct relationship to the medical-surgical problem. The average hospital expense per day is less for a patient with a medically treated back problem than for one treated surgically. In 1974 this expense averaged approximately \$140 a day for medical management, and \$180 a day for surgically treated patients.² These costs are shown in Table 4. The discrepancy in cost between

medical and surgically oriented modes of care is indicated by the percentage of total cost figures.

But these figures are only part of the total cost situation. Most patients with backache problems are treated as outpatients and will incur expense as well as loss of income. No statistical references could be found that identified outpatient cost for backache. Patients admitted to hospital also suffer loss of income. Since no method of evaluating loss of income or outpatient cost could be found, these elements of tangible cost are not included in these figures.

It is possible, however, to add recognized in-hospital physician services to this compiled information. To arrive at the figures listed in Table 5, certain assumptions have been made. A physician providing nonsurgical care would, upon admission of his patient to the hospital, carry out an initial examination (CRVS '74, Nos. 90200, 90215, or 90220)³ and would follow

TABLE 1.—Hospital Discharges Classified by Diagnosis

ICDA Diagnostic Code Number	Descriptor	Number of Patients	Average Stay	Total Patient Days
1 725.1	Prolapsed disc, lumbosacral	10,263	10.3	105,708.9
2 846.0	Sprain or strain, lumbosacral joint	4,665	7.4	34,521.0
3 728.7	Lumbalgia	2,164	7.3	15,797.2
4 805.2	Fracture and fracture-dislocation of vertebral column without mention of spinal cord lesion	1,925	9.8	18,865.0
5 847.8	Sprain or strain of other unspecified parts of back	1,813	7.4	13,416.2
6 728.9	Low back pain (not otherwise specified)	1,064	7.7	8,192.8
7 728.8	Radicular syndrome of lower extremities	770	8.3	6,391.0
8 725.9	Prolapsed disc at unspecified site	693	9.9	6,860.7
9 847.9	Sprain or strain, lumbar	459	7.0	3,213.0
10 373.0	Sciatic neuritis	399	7.8	3,112.2
11 717.0	Lumbago	None listed		
12 725.8	Prolapsed disc at specified site	None listed		
13 726.0	Disorder of sacroiliac joint	None listed		
TOTAL (214 hospitals)		24,215	8.92	216,078.0
CALIFORNIA TOTAL (X3)		72,645	8.92	648,234.0

ICDA = International Classification of Diseases Adapted

TABLE 2.—Hospital Discharges Classified by Procedure (Operation)

ICDA Procedural Code Number	Procedure	Number of Patients	Average Stay	Total Patient Days
83.4*	Excision, intervertebral cartilage (prolapsed disc)	4,455	14.2	63,261
03.0	Laminectomy	1,213	17.1	20,742
84.4†	Spinal fusion	1,013	15.8	16,005
TOTAL (214 hospitals)		6,681	14.96	100,008
CALIFORNIA TOTAL (X3)		20,043	14.96	300,024

*This is listed as 86.4 in Reference 1.

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BACKACHE

TABLE 3.—Surgical Versus Medical Management
(Using Estimate of Total California Experience)

	Number of Patients	Percent	Total Patient Days	Percent
All discharges	72,645	100.0	648,234	100.0
Surgical procedures	20,043	27.5	300,024	46.3
Medical treatment .	52,602	72.5	348,210	53.7

TABLE 4.—Hospital Cost

	Number of Patient/ Bed/Days	Cost	Total	Percent
Medically treated .	348,210	\$140.00	\$ 48,749,400	47.5
Surgically treated .	300,024	180.00	54,004,320	52.5
			\$102,753,720	

with daily visits (CRVS '74, Nos. 90240 or 90250).³ We have estimated the initial charge to be \$35 and the daily visits each \$15 (the total hospital/bed/days were adjusted to reflect this assumption and difference).⁴

The consultant (surgeon) will normally charge a fee for consultation and a separate fee for any necessary subsequent surgical procedure. There is no way, at present, to determine consultation costs, and no estimate of this cost is included in

these figures. We have included an average anaesthetic fee in determining the physician's portion of the surgically related medical costs. The average cost for anesthesia is estimated to have been \$400² in 1974. A similar estimate of the average fee of a surgeon in 1974 was \$900.² The assistant surgeon's fee of \$180 represents 20 percent of the surgical fee. These additional costs are shown in Table 5.

The overall cost, both hospital and physician generated, for those Californians admitted to hospital for backache in 1974 is shown in Table 6. Surgically generated costs are now 60 percent of the total cost of backache. More important is the implication, through extrapolation, that our national cost in 1974 for hospital-treated back problems was probably about \$1.38 billion. This amount represents 1.4 percent of all dollars expended for health care in the United States in 1974. (National total health care cost in 1974 was \$104.03 billion.^{5,p7})

REFERENCES

1. Length of Stay in California Hospitals, Sacramento, California Health Data Corporation, 1974
2. Group Benefit Review Department (Personal Communication). Occidental Life of California, May 24, 1976
3. 1974 California Relative Value Studies, 5th Ed Revised. San Francisco, California Medical Association, 1975
4. Schieber GJ, Burney IL, Golden JB, et al: Physician fee patterns under Medicare: A descriptive analysis. N Engl J Med 294:1089-1093, May 13, 1976
5. Mueller JS, Gibson RM: National health expenditures, fiscal year 1975. Social Security Bulletin 39:3-20, Feb 1976

TABLE 5.—Physician Costs (Charges)

		(1) Initial Visit	Daily Visit	Subtotal	
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<i>Medical</i>					
Number of patients	52,602	\$ 35.00	\$...	\$ 1,841,070	
Hospital/bed/days	348,210 – 52,602 = 296,608	15.00	4,449,120	
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TOTAL					\$ 6,290,190
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		Anesthetic Fee	Surgical Fee	Assistant Fee	Subtotal
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<i>Surgical</i>					
Patients	20,043	\$400.00	\$...	\$...	\$ 8,017,200
	20,043	900.00	...	18,038,700
	20,043	180.00	3,607,740
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TOTAL					\$29,663,640
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TOTAL PHYSICIAN COST (in hospital) ..					\$35,953,830

TABLE 6.—Total Costs of Backache, California 1974

	Hospital Cost (From Table 4)	Physician Cost (From Table 5)	Subtotal	Percent
Medical	\$ 48,749,400.00	\$ 6,290,190.00	\$ 55,039,590.00	40
Surgical	54,004,320.00	29,663,640.00	83,670,684.00	60
SUBTOTAL	\$102,753,720.00	\$35,953,380.00		
TOTAL			\$138,707,550.00	